



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0815; Project Identifier AD-2021-00679-T; Amendment 39-22401; AD 2023-06-15]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. This AD was prompted by reports of missing shims, a wrong type of shim, shanked fasteners, fastener head gaps, and incorrect hole sizes common to the left and right sides at a certain station (STA) frame inner chord and web. This AD requires inspecting for existing repairs, inspecting the area for cracking, and performing applicable on-condition actions. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0815; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule,

any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website myboeingfleet.com.

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at regulations.gov under Docket No. FAA-2022-0815.

FOR FURTHER INFORMATION CONTACT: Bill Ashforth, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3520; email: bill.ashforth@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. The NPRM published in the *Federal Register* on September 9, 2022 (87 FR 55325). The NPRM was prompted by reports of missing shims, a wrong type of shim, shanked fasteners, fastener head gaps, and incorrect hole sizes common to the left and right sides at a certain station (STA) frame inner chord and web. In the NPRM, the FAA proposed to require inspecting for existing repairs, inspecting the area for cracking, and performing applicable on-condition actions. The FAA is issuing this AD to address cracking in the left and right sides of STA

727 frame inner chord and S-18A web before the cracking reaches a critical length. This condition, if not addressed, could result in cracks in fatigue critical baseline structure (FCBS) and the inability of a principal structural element (PSE) to sustain limit load, which could adversely affect the structural integrity of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from six commenters, including American Airlines (AAL), Aviation Partners Boeing (APB), Boeing, Southwest Airlines (SWA), United Airlines (UAL), and one individual. The following presents the comments received on the NPRM and the FAA's response to each comment, except the comment from an individual, which was outside the scope of this AD.

Request to Include Revised Service Information

SWA, UAL, and AAL noted that Boeing planned to issue Revision 1 of Boeing Requirements Bulletin 737-53A1402 RB, and requested consideration for its incorporation into the final rule.

SWA requested that the FAA issue a global AMOC for use of Revision 1 for the requirements.

AAL and UAL noted that the original requirements bulletin had two issues of concern:

- Figures 3, 4, 5, and 6 identify fastener part number (P/N) BACN11E4 as a replacement part. The commenters noted that the fastener has been superseded, and the alternative part, P/N BACN11E4V, is not listed in the Boeing Structural Repair Manual.

- Figures 5 and 6 specify installing a shim regardless of the measured gap, but also state that a gap of 0.006 inch is acceptable after shimming. AAL added that the original requirements bulletin does not give any instructions if the gap is 0.006 inch or less prior to shim installation.

The commenters noted that Revision 1 addresses both issues, and requested that the FAA either (1) delay issuance of the final rule pending release of Revision 1 or (2) revise the proposed AD to allow use of the alternative fasteners and forgo installation of a shim for a gap of 0.006 inch or less prior to shim installation.

The FAA agrees with the request. Boeing has confirmed that P/N BACN11E4 is no longer available, and the new replacement P/N is BACN11E4V. The FAA has reviewed Boeing Alert Requirements Bulletin 737-53A14020 RB, Revision 1, dated January 30, 2023, which updates the fastener callouts and clarifies that shim installation is not required when the measurement of the gap without shim and fasteners installed is 0.006 inch or less. These changes do not impose any additional work over that specified in the original requirements bulletin. The FAA has revised this AD to require accomplishment of Revision 1 of the requirements bulletin and to provide credit for the original requirements bulletin in paragraph (i)(1) of this AD.

Effects of Winglets on Accomplishment of the Proposed Actions

APB and SWA commented regarding the installation of blended or split scimitar winglets per Supplemental Type Certificate (STC) ST00830SE and the effect of that installation on compliance with the proposed actions. SWA further requested a change to paragraph (c) of the proposed AD to clarify that the installation of STC ST00830SE does not affect the accomplishment of the manufacturer's service instructions.

The FAA agrees to clarify that the installation of winglets per STC ST00830SE does not affect the accomplishment of the manufacturer's service instructions. Therefore, the installation of STC ST00830SE does not affect the ability to accomplish the actions required by this AD. Operators of airplanes with these winglets do not need to request a “change in product” alternative method of compliance (AMOC) approval as specified in 14 CFR 39.17. The FAA has redesignated paragraph (c) of the proposed AD as paragraph (c)(1) of this AD, and added paragraph (c)(2) to this AD accordingly.

Request to Correct Typographical Error

Boeing requested the correction of a typographical error in the “Related Service Information under 1 CFR Part 51” section of the preamble of the NPRM. The commenter noted that “HFECD” should be corrected to “HFEC.”

The FAA agrees with the request. The instance of “HFECD” has been changed to “HFEC” in the preamble of this AD as requested.

Request to Make Required Action Optional

SWA requested that the initial general visual inspection (GVI) for existing repairs be optional for airplanes in Group 1, Configuration 2, on which Boeing Alert Requirements Bulletin 737-53A1385 RB, dated August 16, 2019, has already been accomplished. SWA noted that Table 1 and Table 2 of Boeing Alert Requirements Bulletin 737-53A1385 RB, dated August 16, 2019, require the initial GVI for existing repairs, and that including this step in Table 3 and Table 4 of Boeing Alert Requirements Bulletin 737-53A1402 RB, dated July 2, 2021, would necessitate reporting that had already been done in Boeing Alert Requirements Bulletin 737-53A1385 RB, dated August 16, 2019. The commenter further noted that Boeing Alert Service Bulletin 737-53A1402, dated July 2, 2021, does not require re-reporting of existing repairs for Group 1, Configuration 1, airplanes after the shim installation or during the post-repair repetitive inspections.

The FAA partially agrees with this request. Boeing Requirements Bulletin 737-53A1385 RB specifies inspecting for existing repairs, contacting Boeing if any repair is found, and checking for a gap if no repair is found. The FAA agrees that reports for Boeing Alert Requirements Bulletin 737-53A1402 RB, dated July 2, 2021, Group 1, Configuration 2, need not be repeated if an inspection was previously done as specified in Boeing Requirements Bulletin 737-53A1385 RB. However, rather than making this required action optional, paragraph (i) has been added to this AD giving operators credit

for completing that task before the effective date of this AD using Boeing Requirements Bulletin 737-53A1385 RB, dated August 16, 2019.

Request for Additional AMOC

SWA requested that for any AMOC received with regard to AD 2015-08-09, Amendment 39-18145 (80 FR 24195, April 30, 2015) (AD 2015-08-09), an AMOC to the proposed AD be included as well, to alleviate the requirement to obtain a revised FAA 8100-9 for any AMOC to the proposed AD.

The FAA does not agree with the request. AD 2015-08-09 mandated Boeing Alert Service Bulletin 737-53A1325, dated December 3, 2013, and this AD does not supersede AD 2015-08-09; therefore, AMOCs approved for AD 2015-08-09 will continue to be in force and are not affected by the required actions of this AD.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023. This service information specifies procedures for a general visual inspection of the left and right sides of STA 727 frame inner chord at S-18A for existing repairs, an open hole high frequency eddy current (HFEC) inspection of the left and right side entire stackup of the STA 727 frame inner chord at S-18A for cracking (for certain configurations), a surface HFEC inspection of the left and right side STA 727 frame inner chord at S-18A web for cracking, and applicable on-condition

actions. On-condition actions include installation of a new shim, a surface HFEC inspection of the STA 727 frame inner chord at S-18A for cracking, and repair. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Costs of Compliance

The FAA estimates that this AD affects 1,925 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
General visual inspection	2 work-hours X \$85 per hour = \$170	\$0	\$170	\$327,250
HFEC inspection and shim installation	5 work-hours X \$85 per hour = \$425	\$0	\$425	\$818,125

The FAA estimates the following costs to do any necessary repairs or inspections that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need these repairs or inspections:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Inspection	3 work hours X \$85 per hour = \$255	\$0	\$255

The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs specified in this AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-06-15 The Boeing Company: Amendment 39-22401; Docket No. FAA-2022-0815; Project Identifier AD-2021-00679-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

(1) This AD applies to The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 737-53A1402 RB, dated July 2, 2021.

(2) Installation of Supplemental Type Certificate (STC) ST00830SE does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST00830SE is installed, a “change in product” alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by reports of missing shims, a wrong type of shim, shanked fasteners, fastener head gaps, and incorrect hole sizes common to the left and right side station (STA) 727 frame inner chord and S-18A web. The FAA is issuing this AD to address cracking in the left and right side of STA 727 frame inner chord and S-18A web before it reaches a critical length. This condition, if not addressed, could result

in cracks in fatigue critical baseline structure (FCBS) and the inability of a principal structural element (PSE) to sustain limit load, which could adversely affect the structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified by paragraph (h) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 737-53A1402, Revision 1, dated January 30, 2023, which is referred to in Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023.

(h) Exceptions to Service Information Specifications

(1) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023, use the phrase “the Original Issue date of the Requirements Bulletin 737-53A1402 RB,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023, specifies contacting Boeing for repair instructions or for alternative inspections: This AD requires doing the repair, or doing the alternative inspections and applicable on-condition actions using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(i) Credit for Previous Actions

(1) This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Requirements Bulletin 737-53A1402 RB, dated July 2, 2021.

(2) This paragraph provides credit for accomplishment of the most recent inspection and report as specified in the requirements of paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Requirements Bulletin 737-53A1385 RB, dated August 16, 2019.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(k) Related Information

For more information about this AD, contact Bill Ashforth, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3520; email: bill.ashforth@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Requirements Bulletin 737-53A1402 RB, Revision 1, dated January 30, 2023.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website myboeingfleet.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on March 24, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-08477 Filed: 4/21/2023 8:45 am; Publication Date: 4/24/2023]